

### **CLAIMS**

- 1 A frangible coupling having a first ring, a second ring and a plurality of ligaments said first ring and second ring interconnected by said plurality of ligaments, said ligaments configured to fail when a load of a predetermined value causes the first and second ring to move relative to one another by a predetermined amount.
- 2 A frangible coupling as claimed in claim 1 wherein the said ligaments are substantially axially aligned.
- 3 A frangible coupling as claimed claim 1 wherein the first and second rings are cylindrical.
- 4 A frangible coupling as claimed in claim 1 wherein the ligaments are equidistantly spaced apart.
- 5 A frangible coupling as claimed in claim 1 wherein the first ring and the second ring are coaxial.
- 6 A frangible coupling as claimed in claim 1 wherein the first ring and the second ring are concentric.
- 7 A frangible coupling as claimed in claim 1 wherein the first ring is formed with a flange that is provided with a plurality of semi-circular cross-section cut out portions each of which corresponds closely to the outside diameter of the ligaments part way along the ligaments, thereby defining a small clearance between the ligaments and their corresponding cut out portions in the flange.
- 8 A frangible coupling as claimed in claim 7 wherein at least one ligament is formed with a stress raising feature in the region where it is designed to contact

the flange when a load of a predetermined value causes the first and second ring to move relative to one another by a predetermined amount.

- 9 A frangible coupling as claimed in claim 7 wherein each of the ligaments have at least one waisted section.
- 10 A frangible coupling as claimed in claim 7 wherein the first ring is in communication with a means for supporting a rotatable load.
- 11 A frangible coupling as claimed in claim 10 wherein the second ring is fixedly joined to a fan support structure.
- 12 A frangible coupling as claimed in claim 11 wherein said frangible coupling is configured such that at a predetermined out of balance loading induced by the rotatable load at least one ligament is brought into contact with the flange, thereby increasing the stress concentration in the at least one ligament to a level where the at least one ligament fails.
- 13 A frangible coupling as claimed in claim 1 wherein a rotatable shaft is in communication with said first ring via a bearing support means, said rotatable shaft being fixedly joined to a rotatable member positioned between and coaxially with the first and second ring, thereby defining a small clearance between the said member and the ligaments adjacent thereto.
- 14 A frangible coupling as claimed in claim 13 wherein the coupling is configured such that when the first and second ring to move relative to one another by a predetermined amount said rotatable member will come into contact with at least one ligament thereby increasing the stress concentration in the at least one ligament to a level where the at least one ligament fails.
- 15 A frangible coupling as claimed in claim 14 wherein the rotatable member is a disc formed with at least one snub which extends substantially radially outward

from member, there being a small clearance maintained between the said snub and the ligaments adjacent thereto.